Figure 1.   Hull cell panels (2A, 5 min.) obtained from the pure PC 75 bath (A) and after addition of 200 ppm of TEG.
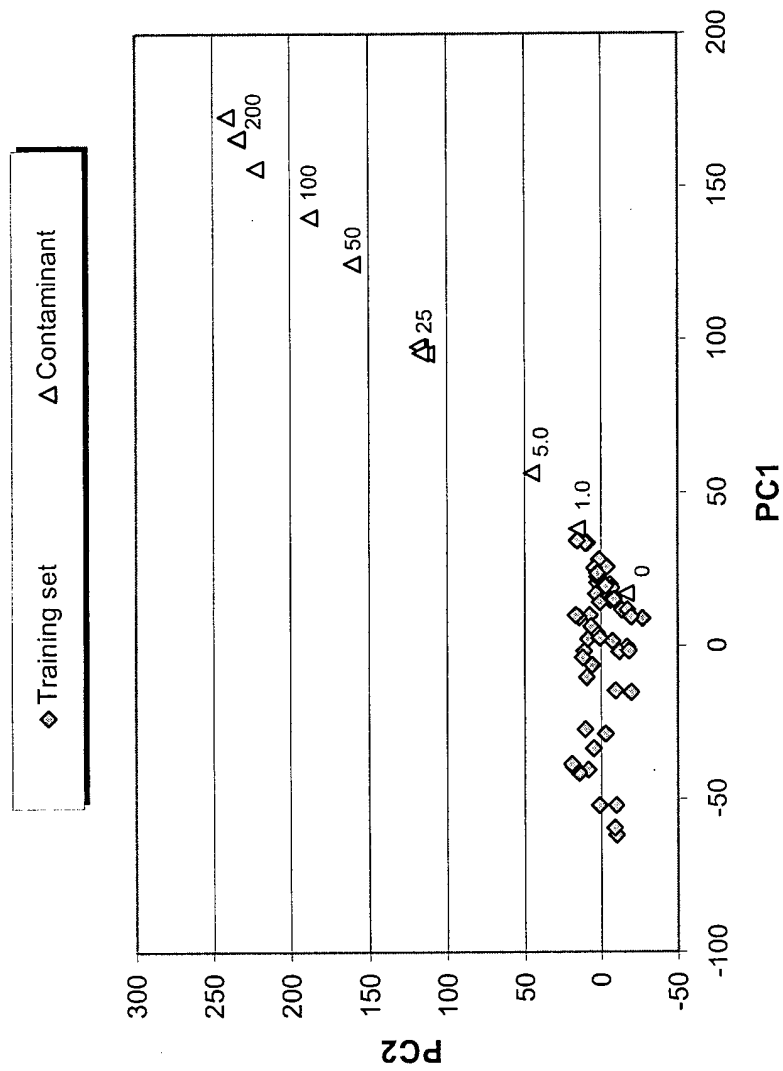
Figure 2.   Plot of first principal components versus second principal components. Training set solutions diamonds; bath samples contaminated with TEG: triangles (numbers –concentration of TEG in ppm). Scan dq21cr2, channel 3, 300-1200, 4 factors.
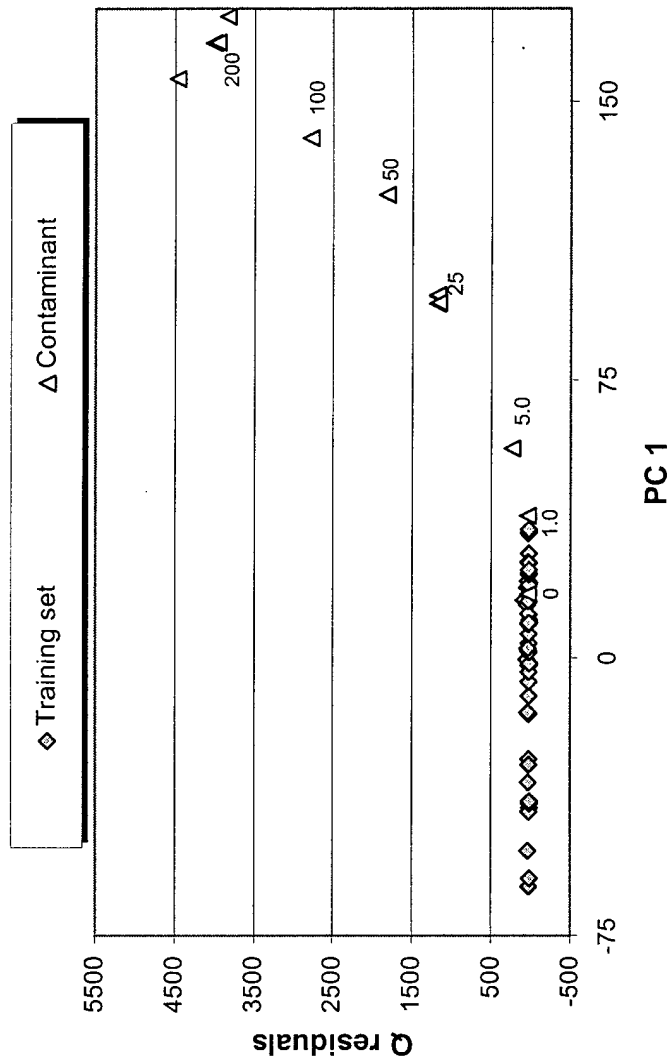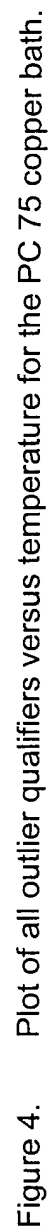
Figure 3.   Plot of first principal components versus Q residuals. Training set solutions: diamonds; bath samples contaminated with TEG: triangles (numbers –concentration of TEG in ppm). Scan dq21cr2, channel 3, 300-1200, 4 factors.

Figure 4.   Plot of all outlier qualifiers versus temperature for the PC 75 copper bath.
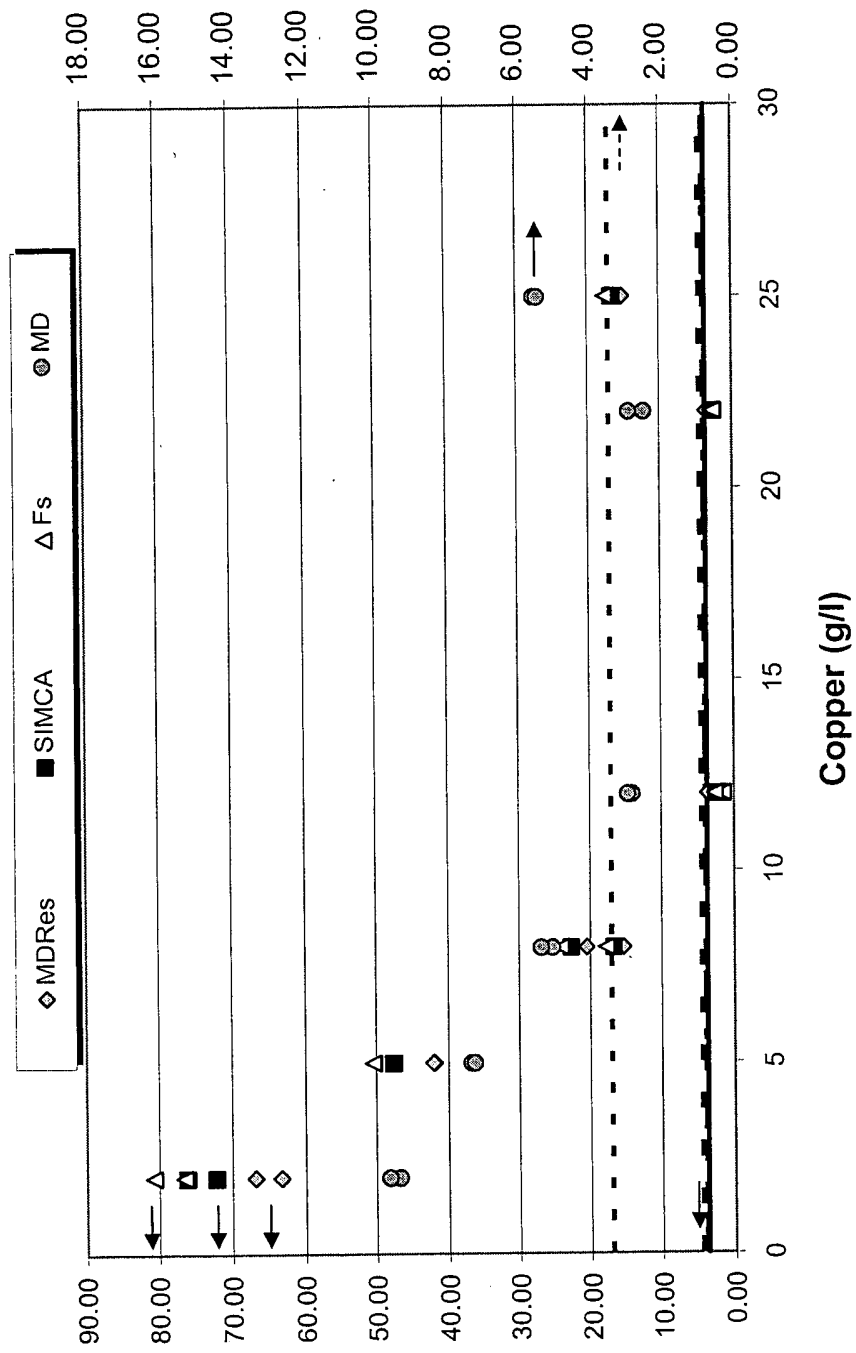
Figure 5.   Plot of all outlier qualifiers versus copper concentration for PC 75 copper bath.
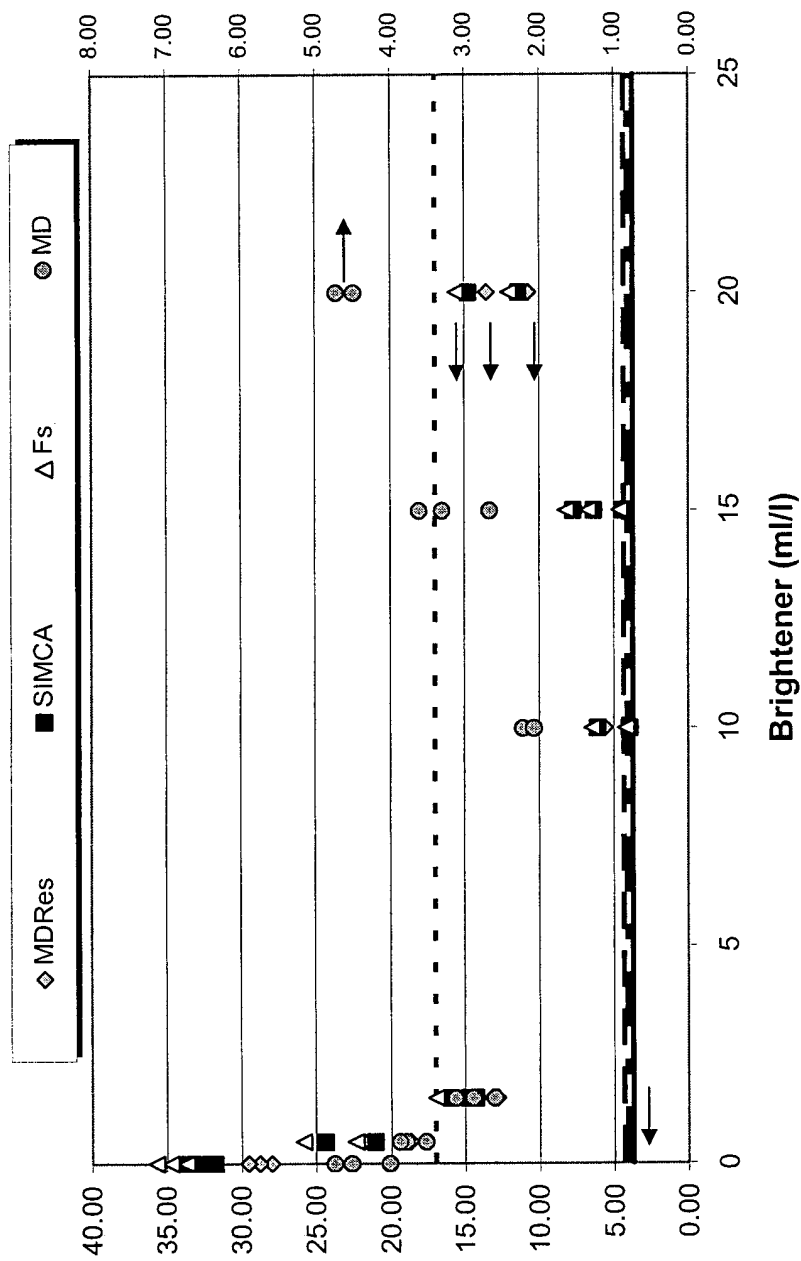
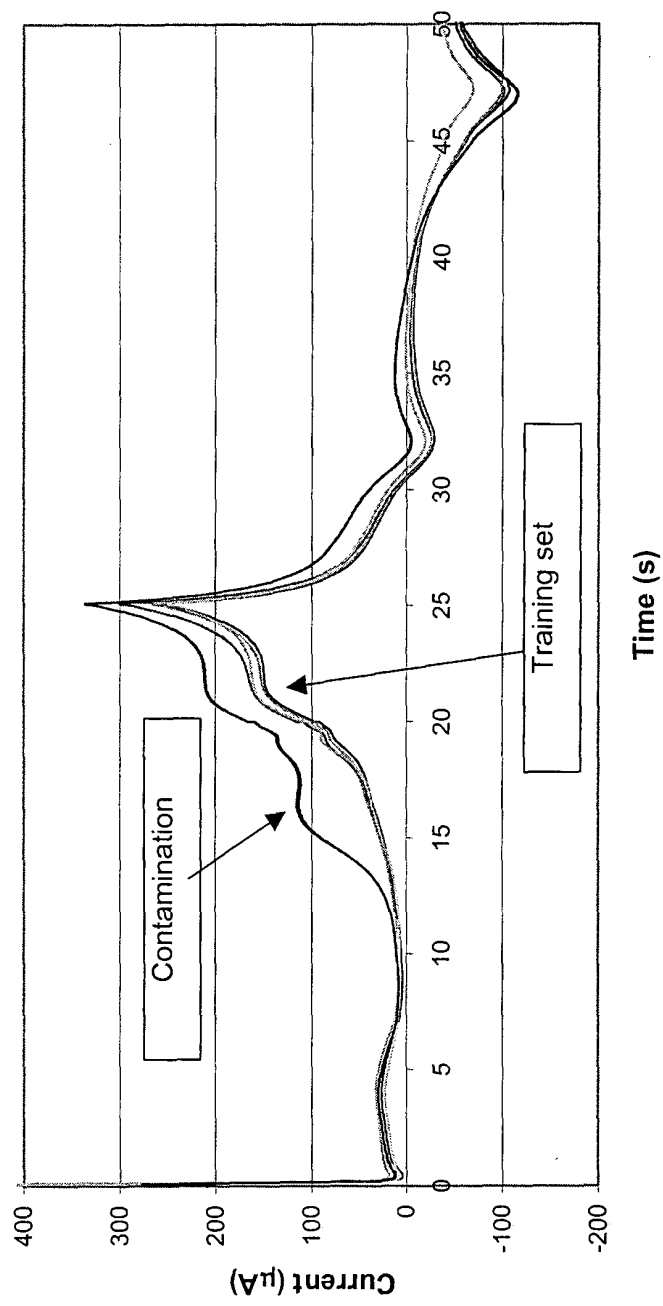Figure 6.   Plot of all outlier qualifiers versus brightener concentration for PC 75 copper bath.

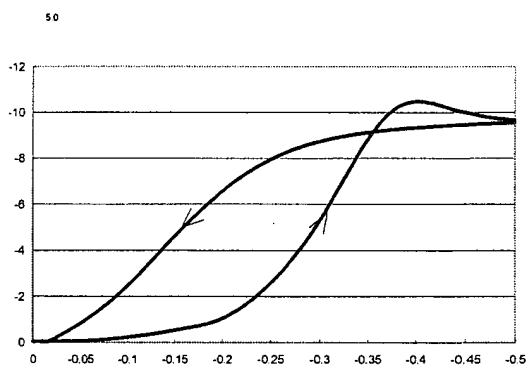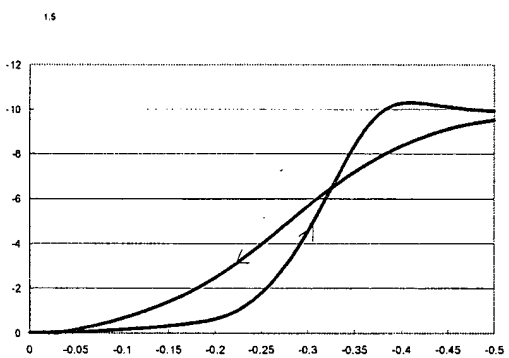Figure 7.   Voltammograms for solutions from industrial training set and an industrial sample contaminated with H_2O_2.
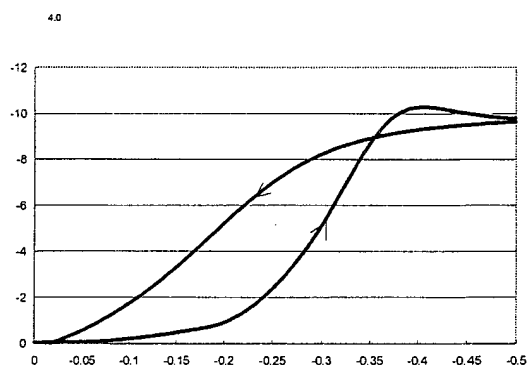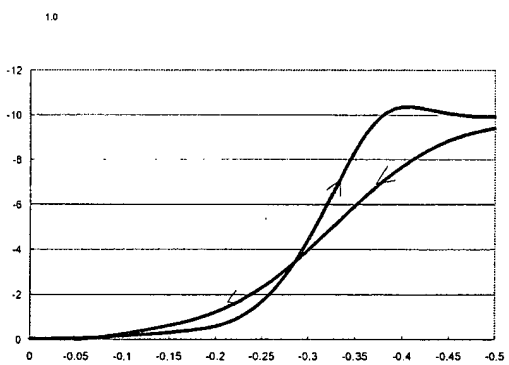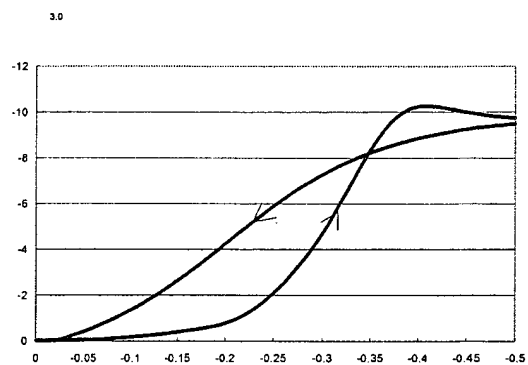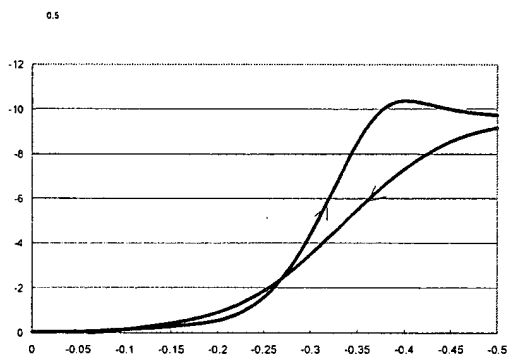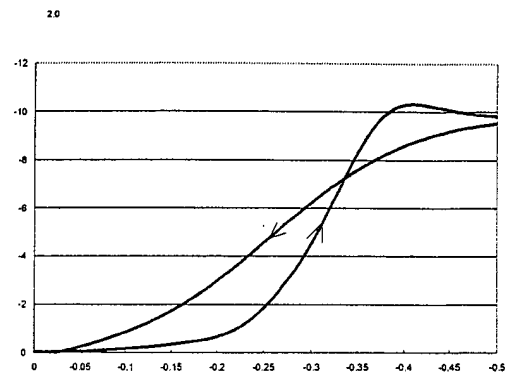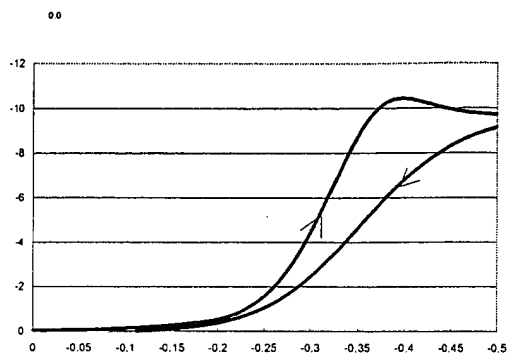
Figure 8.   Voltammograms for PC 75 copper bath showing a hysteresis in copper reduction for various concentration of brightener.
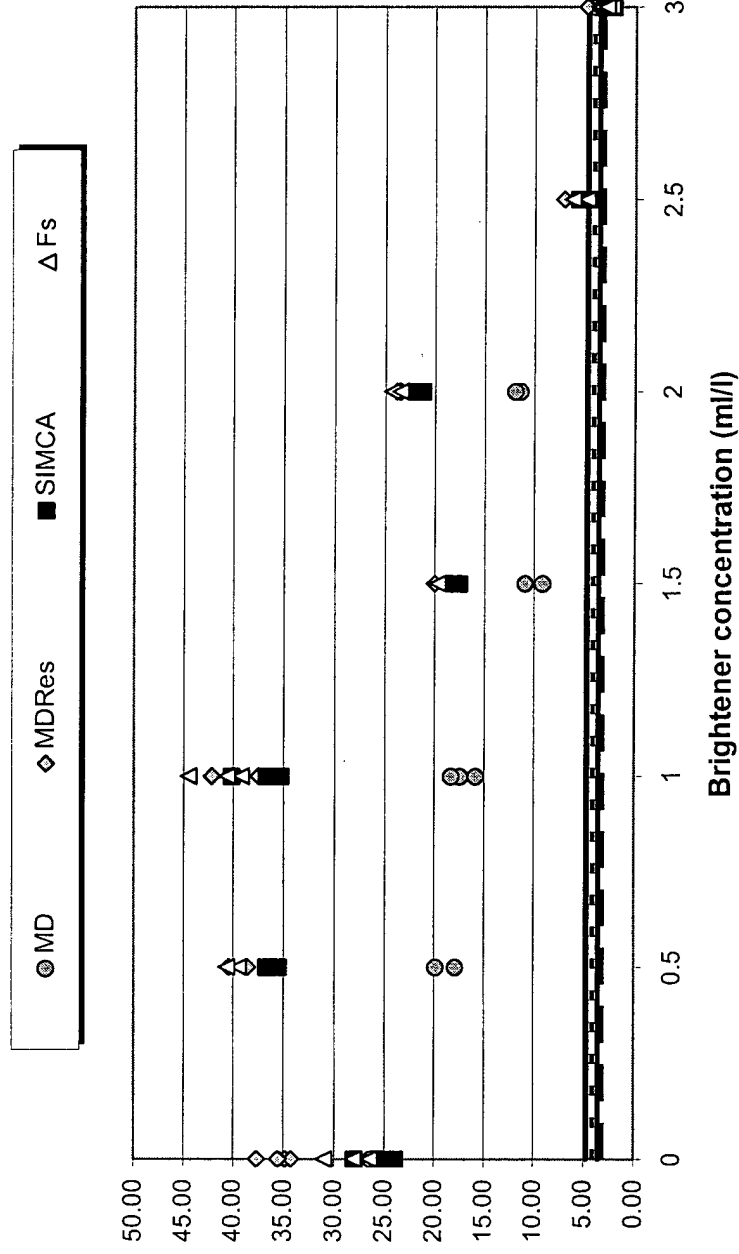
Figure 9.   Plot of all outlier qualifiers for hysteresis in PC75 bath versus concentration of brightener in solution.
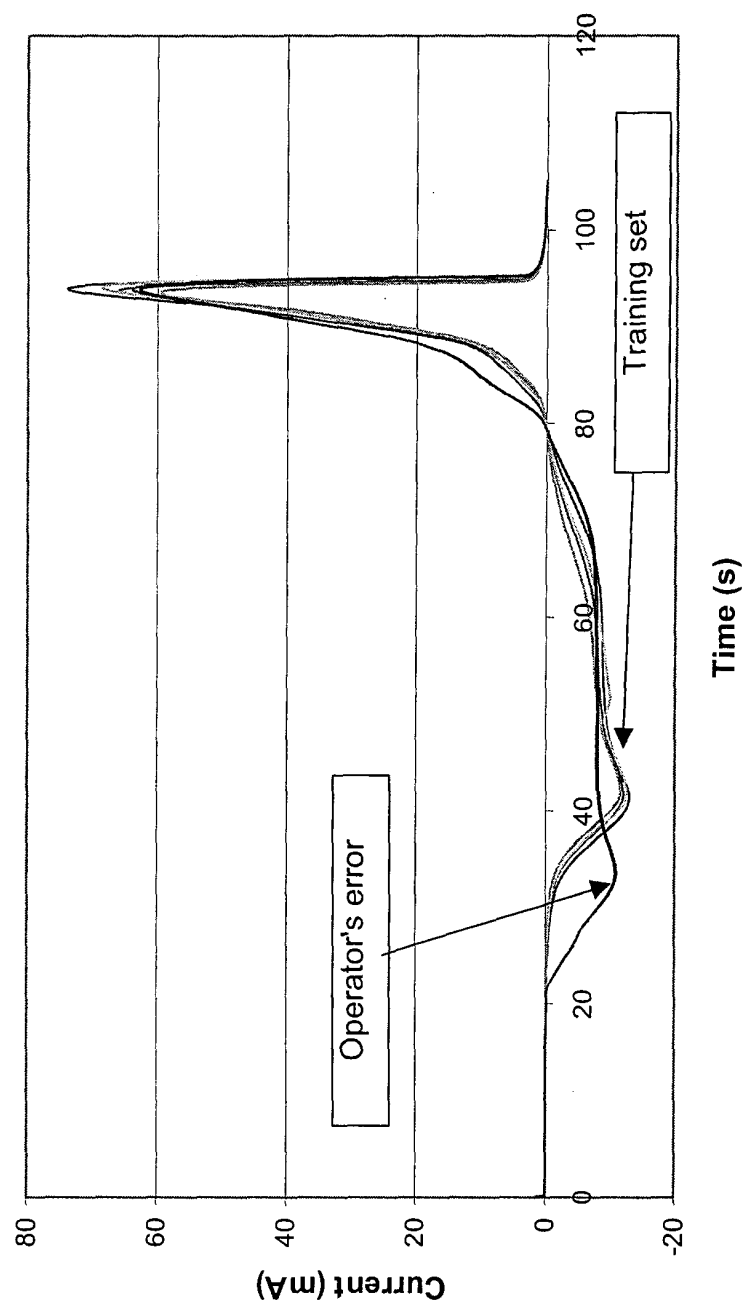
Figure 10.   Voltammograms for solutions from training set and a solution that was replenished improperly.
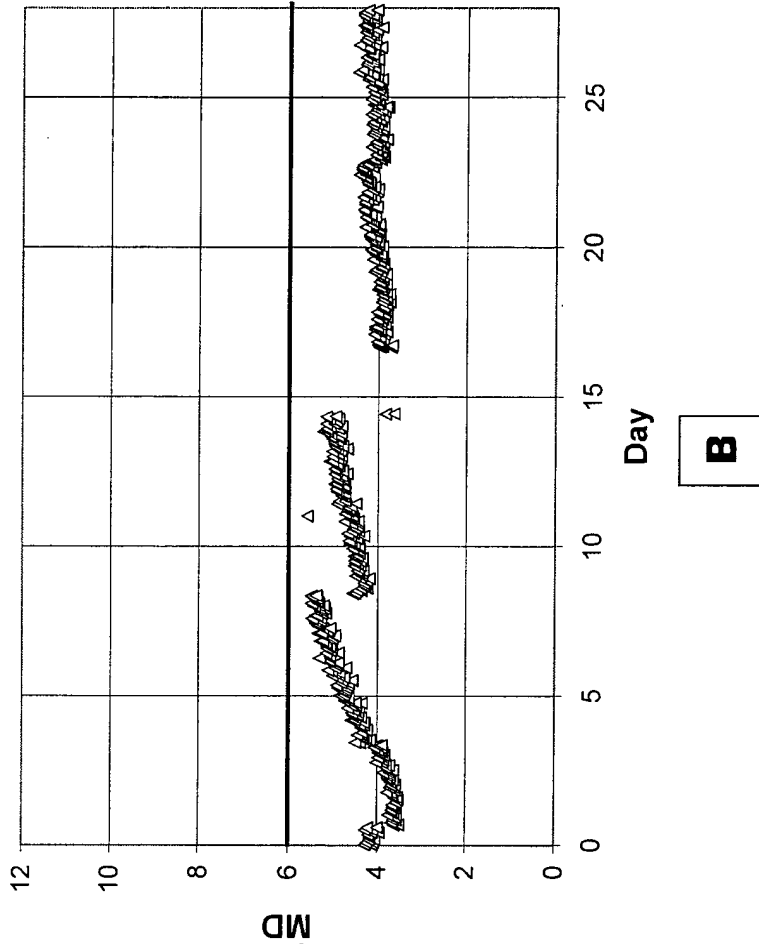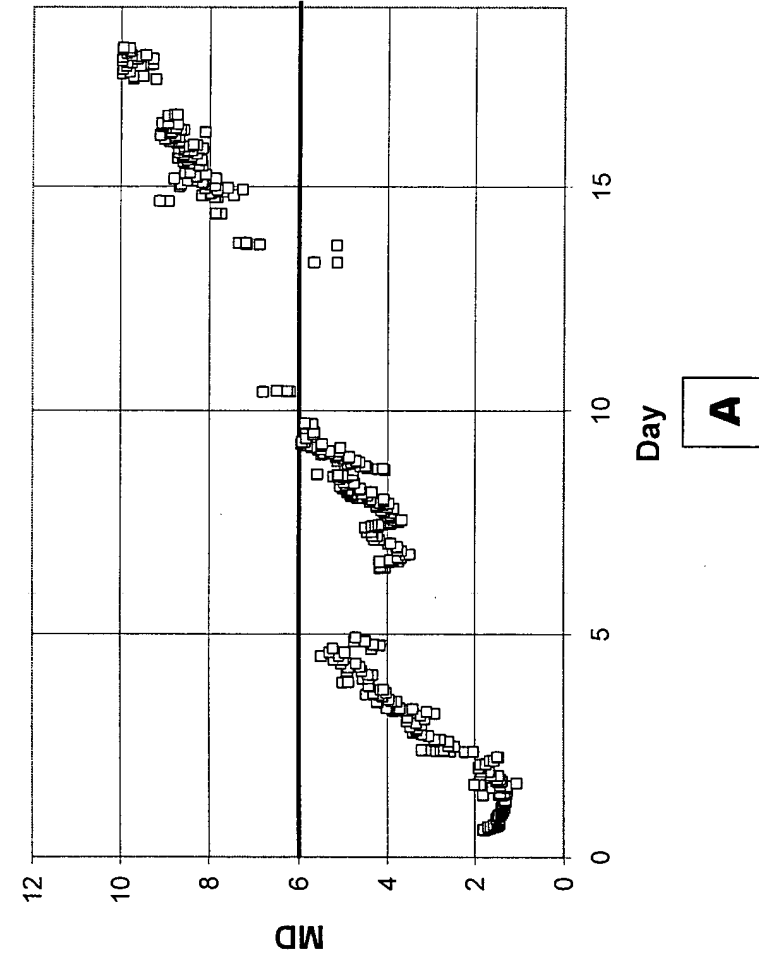
Figure 11. Plot of MD values for copper reduction in industrial solution with passive consumption (A – no plating, circulation only), and industrial solution with active consumption and with feed and bleed (B - plating).
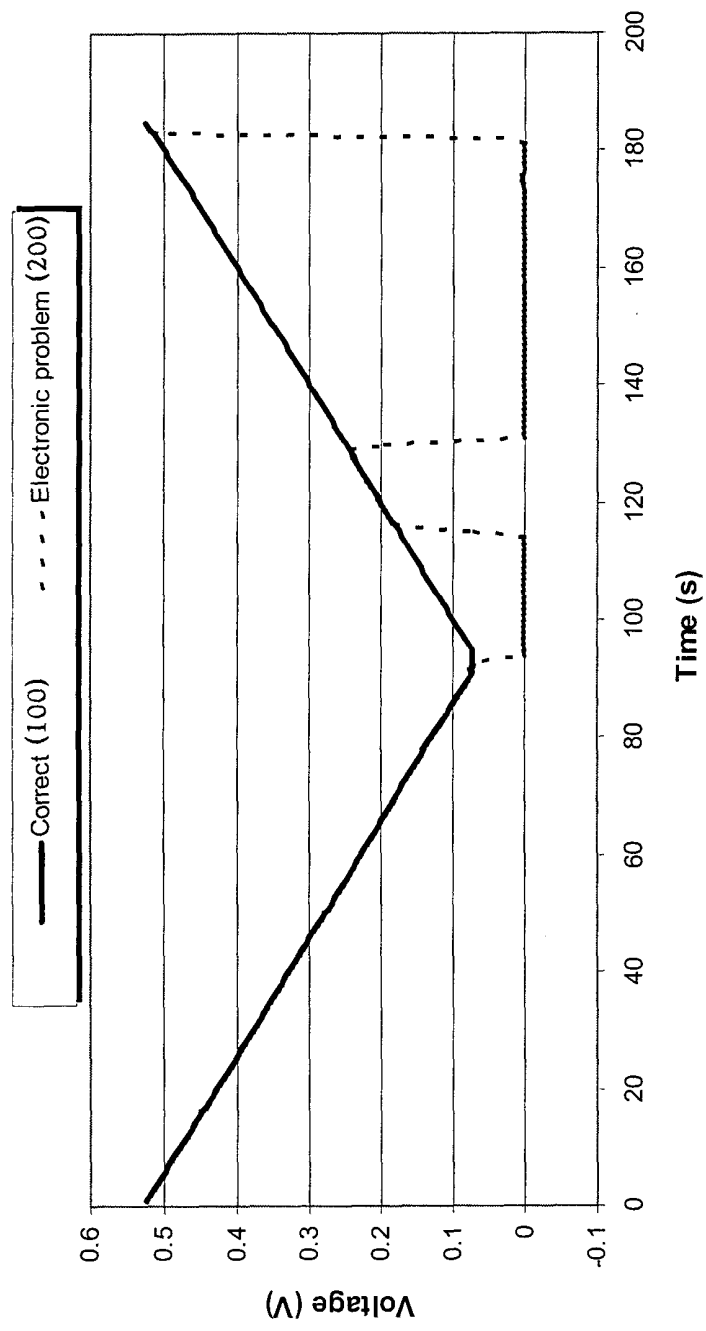
Figure 12. Voltage time plot for a typical (100) and faulty (200) electronic conditions of the measuring system.